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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,176	09/19/2003	Alexander A. Betin	PD-03W101	7104
23915	7590	03/23/2006	EXAMINER	
PATENT DOCKET ADMINISTRATION RAYTHEON SYSTEMS COMPANY P.O. BOX 902 (E1/E150) BLDG E1 M S E150 EL SEGUNDO, CA 90245-0902			NGUYEN, PHILLIP	
			ART UNIT	PAPER NUMBER
			2828	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/666,176

Applicant(s)

BETIN ET AL.

Examiner

Phillip Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/10/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/19/03 & 6/25/05.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 4 and 10-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Campbell et al. ('323).

With respect to claims 1-2 and 4, Campbell discloses in Fig. 5 a spatial filter including a means for increasing angular spread of non-conjugated energy and means for suppressing said angular spread non-conjugated energy wherein the means for increasing angular spread includes an aberrator (82) means for suppressing said angular spread non-conjugated beam without suppressing said conjugated beam, includes an opaque plate with a pinhole aperture therethrough (30).

With respect to claims 10-13, Campbell discloses a loop phase conjugate resonator comprising a first means for providing an interference pattern (col. 4, lines 63-68), an amplifier (64 or 70) in alignment with said first means, and the filter as shown in the rejection of claim 1.

Claim 14 further recites method for spatial filtering. Since Campbell discloses the product, it is product by process for performing method as recited in the claim.

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3. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Suzuki ('175).

With respect to claims 1-4, Suzuki discloses in Fig. 1-2 a spatial filter including a means for increasing angular spread of non-conjugated energy and means for suppressing said angular spread non-conjugated energy wherein the means for increasing angular spread includes an aberrator which is an amplifier 12/112 and means for suppressing includes an opaque plate 26 with a pinhole aperture therethrough .

With respect to claim 5, Suzuki discloses said means for suppressing includes a highly angle-selective thick Bragg grating (14/114 or 16/116).

With respect to claim 6, Suzuki discloses first and second lenses (22 and 24) disposed opposite sides of said means for suppressing (26/120).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Campbell et al. ('323) in view of Abrams et al. ('268).

With respect to claim 7-9, Campbell discloses the claimed invention except for a master oscillator and means for creating a beam having phase conjugate energy and non-conjugated

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energy. Abram et al. discloses in Fig. 3 a conjugate amplifier including a master oscillator (30), a power amplifier beamline (20), means for creating a beam having phase conjugate energy and non-conjugated energy (80), and a spatial filter 32, except for the spatial filter as taught by Campbell which includes means for increasing angular spread of non-conjugated energy. For the improvement, it would have been obvious to the one having ordinary skill in the art at the time the invention was made to provide the spatial filter with aberrator as taught by Campbell in order to block the unwanted phase beams as applied to Bischel. Campbell further discloses plural amplifiers 70 and 64 and the filter is located between at least two amplifiers (64 and 70) and other components.

With respect to claim 15, a method for phase conjugating is introduced. Since Campbell and Abrams disclose the product as recited in claim 7, it is product by process for performing method as recited in the claim.

### ***Response to Arguments***

Applicant's arguments filed 1/18/06 have been fully considered but they are not persuasive.

First of all, the 112 rejections are withdrawn because of the amendment from applicant; however, the prior art rejection remains the same. Following is the reason:

On page 8 of the Response from applicant, applicant argues that Campbell clearly does not teach means for suppressing the angularly spread non-conjugated energy without suppressing the conjugated energy thereof. Examiner disagrees with this argument because in the

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specification of the application, Fig. 4, applicant only discloses a beam clipper with pinhole aperture as means for suppressing the angularly spread non-conjugated energy without suppressing the conjugated energy thereof. Campbell clearly discloses the pinhole apertures 14, 36, 52, and 30 in Fig. 1-5. Therefore, it is believed that the pinholes disclosed by Campbell could also perform the same function as that in the current application.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

***Communication Information***

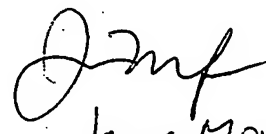
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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James Monette